

REMARKS

Claims 1-14 are pending in the present Application. Of these, claims 9 to 13 have been withdrawn. No claims have been canceled, claims 1 and 14 have been amended, and claims 15 and 16 have been added, leaving claims 1-8 and 14-16 for consideration upon entry of the present Amendment.

As an initial matter, Applicants note that claims 1-14 are pending. The Examiner has indicated that only claims 1-13 are pending. Applicants believe this is incorrect. Applicants direct the Examiner's attention the Preliminary Amendment filed on May 13, 2005, which included 14 claims. Applicants further note that in the Restriction Requirement dated January 26, 2009, the Examiner acknowledged that claims 1-14 were pending. Further, in Applicants Response to Restriction Requirement filed on February 26, 2009, Applicants elected Group I, claims 1-8 and 14. Applicants respectfully request clarification from the Examiner and acknowledgement that claims 1-14 are pending.

A substitute specification is filed herewith. For convenience, a "clean" version and a "marked-up" version are attached. The substitute specification includes a "BRIEF DESCRIPTION OF THE DRAWINGS" section. Support for this amendment can be found at least at paragraphs [0043] through [0048]. The substitute specification also includes a copy of the Abstract on a separate sheet.

Claims 1 and 14 have been amended to better define the invention. In particular, claims 1 and 14 have been amended to clarify that the intermediate layer comprises a metallocene catalyzed olefinic resin. Support for these amendments can be found at least at [0024] and throughout the specification.

Claims 15 and 16 have been added to further define the invention. Antecedent basis for these claims can be found at least at [0015].

Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

Specification

The abstract of the disclosure has been objected to because it is not filed on a separate sheet. (Office Action dated 6/12/2009, page 2)

The specification has been objected to because it does not contain a brief description of the drawings. (Office Action dated 6/12/2009, page 2)

As noted above, a substitute specification is filed herewith. For convenience, a “clean” version and a “marked-up” version are attached. The substitute specification includes a “BRIEF DESCRIPTION OF THE DRAWINGS” section. Support for this amendment can be found at least at paragraphs [0043] through [0048]. The substitute specification also includes a copy of the Abstract on a separate sheet. Applicants believe that the substitute specification addresses each of the objections raised by the Examiner.

Applicants respectfully request withdrawal of the objections.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1-8 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office Action dated 6/12/2009, page 3) In making the rejection, the Examiner stated it is unclear whether a metallocene catalyst must be present or if the claim is referring to a metallocene catalyzed olefinic resin. (Office Action dated 6/12/2009, page 3) Applicants respectfully traverse this rejection.

As noted above, claims 1 and 14 have been amended to clarify that a metallocene catalyzed olefinic resin is meant, as indicated at [0024] of the specification. Applicants believe that amended claims 1-8 and 14 meet the requirements of 35 U.S.C. § 112, second paragraph. Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-7 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Hanoka (US 6,114,046)(hereinafter “Hanoka”) in view of Zenko et al (US 20020038664)(hereinafter “Zenko”). (Office Action dated 6/12/2009, page 4) Applicants respectfully traverse this rejection.

“A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int'l*

Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). To find obviousness, the Examiner must “identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does.” *Id.*

As amended, independent claim 1 recites:

1. A multilayer product comprising:
a polymer substrate,
a wear layer made of polymer of an ionomeric type, and,
between the substrate and the wear layer, an intermediate layer of a
metallocene catalyzed olefinic polymer containing from 1 to 40 parts by weight
of a metallocene per 100 parts by weight of the olefinic polymer.

As noted in the specification, the advantages of using a metallocene catalyzed olefinic resin in the claimed multilayer product is to enhance adhesion of the intermediate layer to **both** the wear layer on one side and to the substrate on the other side, without compromising the processability of the product. ([0027])

Hanoka is generally directed to an encapsulating material comprising a layer of metallocene polyethylene placed between two layers of ionomer, especially for use in solar panels. (Abstract) The two ionomer layers are based on an ethylene methacrylic acid copolymer (such copolymer containing at least 10% (by wt.) of the carboxylic acid with at least 50% of the acid as "free" (un-neutralized acid). (Col. 2, line 67 – Col. 3, line 3) Hanoka teaches the replacement of expensive ionomer polymer by the cheaper metallocene catalyzed olefinic resin, noting that a three layer structure (i.e., ionomer - metallocene polyethylene – ionomer) reduces cost of the encapsulant over that of a single layer of ionomer of the same total thickness. (Col. 3, lines 27-35)

Hanoka teaches one of several advantages of using the three-layer structure presented in Hanoka (i.e., ionomer - metallocene polyethylene – ionomer) involves the bonding strength of the encapsulant with all adjacent layers resulting from the two outer ionomer layers. (Col. 2, lines 61-63; Col. 3, lines 12-26) In particular, Hanoka teaches that the bonding strength of the ionomer layers is much stronger than the bonding of metallocene polyethylene to adjacent layers. (Col. 3, lines 12-26) Specifically, Hanoka discloses that bonding of metallocene polyethylene to adjacent layers results in adhesive bond failures, where the bond at the interface fails. (Col. 3, lines 18-26) In contrast, Hanoka discloses that bonding the ionomer

layers to adjacent layers provides a much stronger bond resulting in only cohesive failure, where the polymer material itself fails before the interface bond. (Col. 3, lines 19-26) Hanoka clearly states “Cohesive failure describes a much stronger bond [than adhesive bonds].” (Col. 3, lines 12-26) For this reason, Applicants respectfully assert that Hanoka teaches away from using an intermediate layer of a metallocene catalyzed olefinic polymer between the substrate and the wear layer as claimed, since the bonding would not be as strong as the bonding the substrate layer directly to the ionomer layer. Thus, although there may be some cost savings associated with incorporating a metallocene polyethylene layer, Hanoka clearly teaches away from bonding of metallocene catalyzed olefinic polymer to the substrate layers compared to bonding the ionomer layers to adjacent layers.

In addition, the three-layer structure presented in Hanoka represents a symmetrical multilayer product (i.e., ionomer – metallocene polyethylene – ionomer). In contrast, the claimed invention provides a multilayer product which is asymmetrical (i.e., polymer substrate – metallocene catalyzed olefinic resin – wear layer made of a polymer of the ionomeric type). Hanoka simply does not teach a multilayer product as claimed.

In summary, since Hanoka clearly teaches away from bonding of metallocene catalyzed olefinic polymer to the both the polymer substrate and to the wear layer, and further since Hanoka represents an symmetrical multilayer product and not an asymmetrical multilayer product as claimed, Applicants believe that the teaching of Hanoka would **not** have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does.

Zenko is cited for teaching elements associated with dependent claim 7. (Office Action dated 6/12/2009, page 4) Specifically, Zenko is cited for teaching a solar cell module wherein the encapsulate comprises low-density polyethylene and acrylic resin. (Office Action dated 6/12/2009, page 4) However, Zenko does not teach a multilayer product as claimed or provide any teaching or suggestion to prompt a person of ordinary skill in the art in the relevant field to create a multilayer product comprising a polymer substrate, a wear layer made of polymer of an ionomeric type, and, between the substrate and the wear layer, an intermediate layer of a metallocene catalyzed olefinic polymer.

In view of the foregoing discussion, Applicants respectfully assert that a *prima facie* case of obviousness has not been made. Applicants respectfully request reconsideration and allowance of the claims.

Claim 8 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Hanoka in view of Zenko, as applied to claims 1-7 above, and further in view of JP-0923018. (Office Action dated 6/12/2009, page 4) Applicants respectfully traverse this rejection.

As discuss in detail above, Applicants believe that the claimed invention in not obvious over the combination of Hanoka and Zenko. JP-0923018 does not make up for the deficiencies of Hanoka and Zenko. JP-0923018 is cited for teaching the application of polyurethane to a solar cell module substrate. (Office Action dated 6/12/2009, page 5) However, JP-0923018 does not teach a multilayer product as claimed or provide any teaching or suggestion to prompt a person of ordinary skill in the art in the relevant field to create a multilayer product comprising a polymer substrate, a wear layer made of polymer of an ionomeric type, and, between the substrate and the wear layer, an intermediate layer of a metallocene catalyzed olefinic polymer. For these reasons at least, Applicants respectfully assert that a *prima facie* case of obviousness has not been made. Applicants respectfully request reconsideration and allowance of the claims.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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